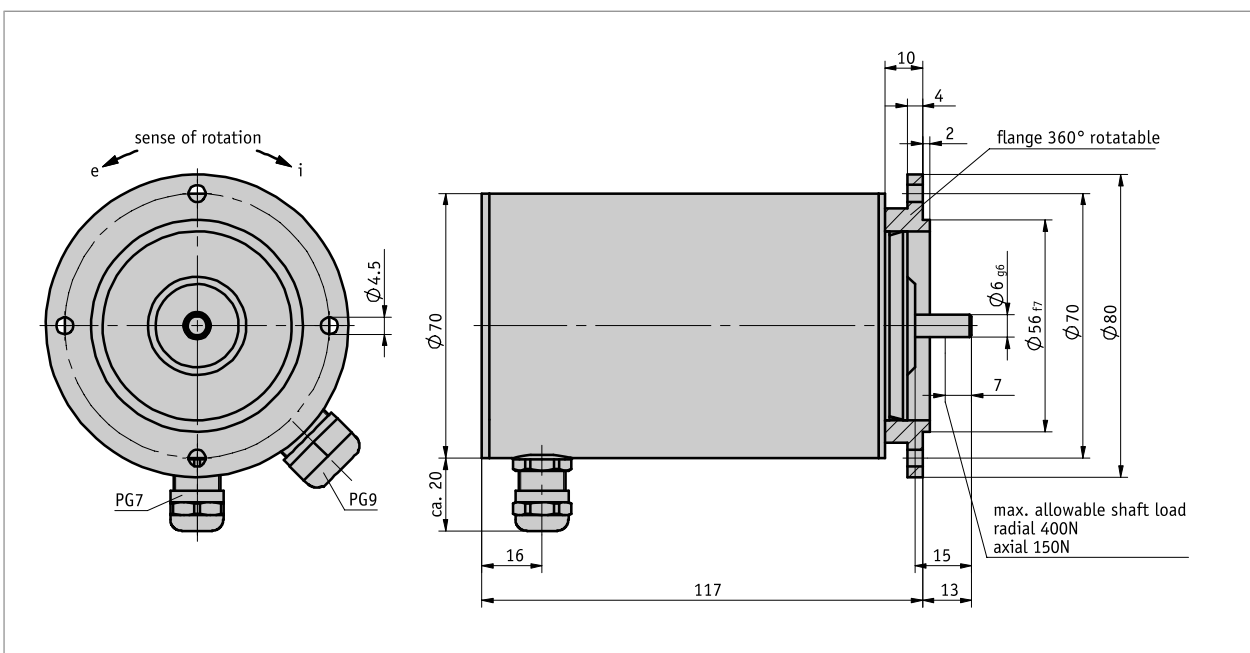


# Geared potentiometer GP43

## Aluminum housing with solid shaft

### Profile

- Solid shaft  $\varnothing$  6 mm
- Adaptation to various measurement distances owing to a wide range of gear ratios
- Integrated slip clutch to protect the potentiometer
- Compact design
- Potentiometer or power output
- IP65 protection class
- Up to 3 cam-operated switch outputs, freely adjustable



### Mechanical data

Feature	Technical data	Additional information
shaft	black-finished steel	
Housing	aluminum	
Gear ratio	0.1 ... 512	
Speed	$\leq 500$ min <sup>-1</sup>	depending on transmission
Shaft load rating	$\leq 400$ N	radial
	$\leq 150$ N	axial
Potentiometer service life	$1 \times 10^6$ rotation(s)	

### Electrical data

#### ■ Encoder potentiometer type O1,1 helix

Feature	Technical data	Additional information
Power rating	1 W at 70 °C	$\leq 30$ V
resistance	1, 5, 10 k $\Omega$	
Resistance tolerance	$\pm 10$ %	
Standard terminal resistance	0.5 %	
Linearity tolerance	$\pm 1$ %	
Design	hybride	

### ■ Encoder potentiometer type 02,10 helices

Feature	Technical data	Additional information
Power rating	2 W at 70 °C	≤30 V
resistance	1, 5, 10 kΩ	
Resistance tolerance	±5 %	
Standard terminal resistance	0.2 %	
Linearity tolerance	±0.25 %	
Design	wire	

### ■ Encoder potentiometer type 03, 10 helices

Feature	Technical data	Additional information
Power rating	2 W at 70 °C	≤30 V
resistance	1, 5, 10 kΩ	
Resistance tolerance	±5 %	
Standard terminal resistance	0.2 %	
Linearity tolerance	±0.25 %	
Design	hybride	

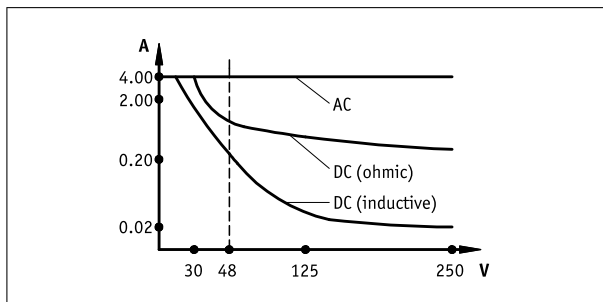
### ■ Encoder potentiometer type 03/0.1, 10 helices

Feature	Technical data	Additional information
Power rating	2 W at 70 °C	≤30 V
resistance	5, 10 kΩ	
Resistance tolerance	±5 %	
Standard terminal resistance	0.2 %	
Linearity tolerance	±0.1 %	
Design	hybride	

### ■ Transducer, power output

Feature	Technical data	Additional information
Operating voltage	24 V DC ±20 %	
Output current	4 ... 20 mA at load 500 Ω	

### ■ Load capacity of the switching cams



## System data

Feature	Technical data	Additional information
Measuring range	340° ±5°, (mechanical full-length)	potentiometer type 01
	3600° +10°	potentiometer types 02, 03, 03/0.1

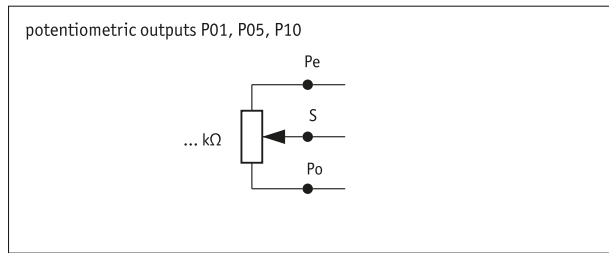
## Ambient conditions

Feature	Technical data	Additional information
Ambient temperature	-20 ... 80 °C	
Relative humidity		condensation inadmissible
EMC	EN 61000-6-2	interference resistance / immission
	EN 61000-6-4	emitted interference / emission
Protection category	IP52	EN 60529

### pin assignment

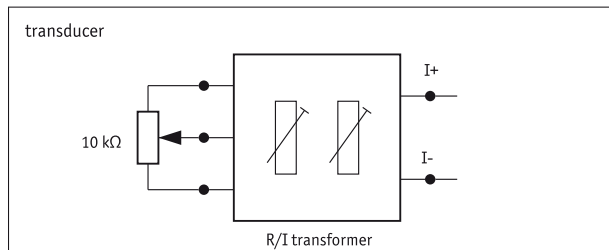
#### ■ Potentiometric outputs P01, P05, P10

Signal	Terminal
Po	11
Pe	13
S	12



#### ■ MMW transducer

Signal	Terminal
I+	12
I-	11
nc	13



#### ■ Cam

Assignment	Switch cam A Terminal	Switching cam B terminal	Switching cam C terminal
	3	4	7
	2	5	8
	1	6	9

### Order

#### ■ Gear ratio calculation

Formula:  $i_1 = \frac{n \times 360^\circ}{\alpha}$

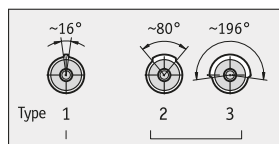
n = number of revolutions on the driving shaft  
 $\alpha$  = potentiometer angle of rotation  
 340° with 1-coil potentiometer  
 3600° with 10-coil potentiometer  
 i1 = order feature for gear ratio

If the calculated ratio "i1" is the same as a value in the ordering table for the "ratio" feature, but this is not available, select the next highest ratio.

#### ■ Switch cam order

Digit 1	"Digit 2"	Digit 3	Ordering data
Cam shape 2			2
Cam shape 1	Cam shape 3		13
Cam shape 1	Cam shape 2	Cam shape 3	123

Example of order table, characteristic G



Switching angle of the 3 switching cams:  
 specifically for end position limiter (1), for control functions (2, 3).

#### ■ Ordering table

Feature	Ordering data	Spezifikation	Additional information
Gear ratio	A ...	0.1/10, 0.2/10, 0.25/10, 0.333/10, 0.5/10, 0.5/2.5, 1, 1.400, 2, 2.14, 2.500, 3, 4, 5, 5.385, 6, 7, 10, 12, 14, 15, 20, 21, 24, 30, 33, 35, 40, 48, 55, 60.5, 64, 65.154, 70, 80, 96, 101.5, 121, 150, 256, 463.830, 512 others on request	
potentiometer type	B 01	1 helix, hybrid	

Feature	Ordering data	Spezifikation	Additional information
	02 03 03/0.1	10 helices, wire 10 helices, hybrid 10 helices, hybrid, linear tolerance $\pm 0.1\%$	
resistance	C 1 5 10	potentiometer 1 k $\Omega$ Potentiometer 5 k $\Omega$ potentiometer 10 k $\Omega$	
transducer	D MMW OMW	transducer 4 ... 20 mA without	only only for resistance 10 and potentiometer type 02 or 03
Sense of rotation	E e i	no information required counter-clockwise ascending values clockwise ascending values	only for OMW transducer only for MMW transducer only for MMW transducer
cam/form	F ...	1, 2, 3, 11, 12, 13, 22, 23, 33, 111, 112, 113, 122, 123, 221, 222, 223, 233, 331, 333 others on request	
switching voltage	G 1 2	over 48 V electric strength up to 48 V electric strength	

### Order key

GP43 -  - V/6 -  -  -  -  -  -  -

A B C D E F G



#### Scope of delivery:

GP43, Installation Instructions



#### Accessories you can find:

Flexible coupling AK18  
Measurement display MA50

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